

**CLAIMS:**

What is claimed is:

- 5 1. A method for generating partial differential equations for perspective corrected texture coordinates, comprising:
  - calculating texture coordinates at each of four adjacent pixels;
  - 10 calculating the difference between the texture coordinates;
  - calculating a perspective correction factor based on perspective correction coordinates; and
  - 15 multiplying each texture coordinate difference by the perspective correction factor.
2. The method according to claim 1, wherein the step of calculating the difference between coordinates uses a set of subtracts in parallel.
- 20 3. The method according to claim 1, wherein the step of calculating the perspective correction factor uses a set of multiplies in parallel.
- 25 4. The method according to claim 1, wherein calculating the partial differential equations for a single texture coordinate for all four pixels requires 12 subtracts and 32 multiplies.
- 30 5. The method according to claim 1, wherein subsequent coordinates are found by adding the partial differential equations in a given direction.

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6. A computer program product in a computer readable medium for use in a data processing system, for generating partial differential equations for perspective  
5 corrected texture coordinates, the computer program product comprising:

instructions for calculating texture coordinates at each of four adjacent pixels;

10 instructions for calculating the difference between the texture coordinates;

instructions for calculating a perspective correction factor based on perspective correction coordinates; and

15 instructions for multiplying each texture coordinate difference by the perspective correction factor.

7. The computer program product according to claim 6, wherein the instructions for calculating the difference between coordinates use a set of subtracts in parallel.  
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8. The computer program product according to claim 6, wherein the instructions for calculating the perspective correction factor use a set of multiplies in parallel.

25 9. The computer program product according to claim 6, wherein calculating the partial differential equations for a single texture coordinate for all four pixels require 12 subtracts and 32 multiplies.

30 10. The computer program product according to claim 6, wherein subsequent coordinates are found by adding the partial differential equations in a given direction.

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11. A system for generating partial differential equations for perspective corrected texture coordinates, comprising:

- 5       a first calculating component which calculates texture coordinates at each of four adjacent pixels;  
      a second calculating component which calculates the difference between the texture coordinates;  
      a third calculating component which calculates a  
10 perspective correction factor based on perspective correction coordinates; and  
      a multiplying component for multiplying each texture coordinate difference by the perspective correction factor.

15 12. The system according to claim 11, wherein the second calculating component which calculates the difference between coordinates uses a set of subtracts in parallel.

20 13. The system according to claim 11, wherein the third calculating component which calculates the perspective correction factor uses a set of multiplies in parallel.

25 14. The system according to claim 11, wherein calculating the partial differential equations for a single texture coordinate for all four pixels requires 12 subtracts and 32 multiplies.

30 15. The system according to claim 11, wherein subsequent coordinates are found by adding the partial differential equations in a given direction.